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Web site designers' opinions about the visual elements

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Abstract

The purpose of this study to examine educational web site designers' opinions about the visual elements on the web sites. The case study method was used in this study. The sample of this research consisted of four participation as two lecturers, a research assistant and a teacher. This study was conducted on the 2007/2008 during the spring academic year. The data was collected by the semi-structured interview technique, and data were analyzed using descriptive and content analysis techniques. As a result of the study, it was identified some deficiencies about design of visual elements on the current educational sites. To overcome these deficiencies it can be suggested to team work and to be tested by the audiences.

*Keywords:*Visual elements; educational web site; designers' opinions.

1. Introduction

Computer-assisted instruction has begun to replace web based learning and education through especially computers and the internet take into schools (Karahan, 2001). Internet sites have become a popular educational resource (Abdullah,1998). This situation has increased the importance of the web sites, pursuant to this, many web sites began to develop for instructional purposes (Yigit et al., 2000; Kurbanoglu, 2002). To increase in the number of web sites has revealed the need of evaluation of these (Abdullah, 1998; Small and Arnone, 1999). Appealing to children of all ages and consists of various visual elements of the site is being prepared. Variety of sites on the internet has also brought along their design problems. These problems especially come to our front on the web sites which prepared for children (Bağcıvan, 2003). Site designers use lots of visual elements (graphics, pictures, figures, animations, videos, etc.) in order to attract and affect the users. However, using lots of visual elements can bring along some problems. Some of the emerging problems are slowing the site and creating visual pollution. The misuse of the web site's items' prevents to achieve the goals of the sites. Furthermore, sites prepared by persons' who aren't expert or experienced and their lack of knowledge regarding the web site design principles and technologies causes development of the poor materials (Pehlivan, 2006). Thus, poor sites come out in terms of

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visual design elements. The internet confronts children of all ages with these sites. Children's mental and psychological development who is faced with these unqualified materials will be affected negative. This situation cause that students will be disaffection to these popular educational resources. Therefore, it should be determined wrong designed web sites, which affect adversely to students' development. However, the number of web site evaluation studies is limited for to determine their visual properties. It was trying to determine the visual elements of the web sites which were designed for educational purposes and what things can do for the effective visual elements with this study. Because of the results of this research were derived from interviews who are designed web sites for educational purposes is extra important valuable, and it is believed that the results will light to be made educational purpose web site designs in which effective instruction content in terms of visual elements.

The purpose of this study to examine educational web site designers' opinions about the visual elements (graph, picture, figure, simulation, video, etc.) on the web sites. For this purpose, the following sub-problems were investigated.

1. What are they thinking about the importance of the visual elements' usage on the educational web sites?
2. What do they regard in terms of design principles for the visual elements?
3. How they evaluate the quality of visual elements in which prepared for current educational web sites?
4. What are the problems that designers faced in the design of visual elements?
5. What are their proposals related to designing of visual elements?

2. Method

The sample of this research consisted of four participation as two lecturers, a research assistant and a teacher. This study was conducted on the 2007/2008 during the spring academic year. Because of the study was carried out with four-site designer to the characteristics of the visual elements were obtained four different perspectives. Thus, this study is a qualitative research towards ontological and epistemological assumptions. And also the case study approach was used in this study as a research method since it was aimed investigation to the educational web designer' opinions deeply.

It was received opinions from different researchers about reached codes, conclusions and comments towards collected data, and moreover, it was cited opinions directly from participations to ensure the validity of the research. The names of the four participations were coded as A, B, C, D.

Since the case studies aim detailed investigations of the research subject it requires few participations. The selection of the sample should be intentional and cannot be randomly in such studies (Yıldırım and Şimşek, 2006). Thus, the sample who is the educational web site designer was selected as intentional to find answers the sub-questions. Two of these are lecturer and one of these is a research assistant who are working at a university and one of these is a teacher, who is working in an elementary school. Thereby the diversity of the sample was provided. Two of the sample are looking good themselves about their ability of web site design while the other two are looking best. It has been identified that all the samples designed at least one web site for education oriented, and they utilize advantages of the internet environments in their instruction processes.

The semi-structured interview technique was used in this study as the data collection device and data were analyzed using descriptive and content analysis techniques. In the study, the interview questions prepared, which can answer the sub-problems what defined toward the main problem. The expert opinions were taken to ensure the content validity of the questions, and the final form was composed.

The descriptive analysis and the content analysis techniques were applied the data which obtained from interviews. The outlined and interpreted data is analyzed more depth in the content analysis unlike the descriptive analysis. Firstly, the data is conceptualized afterward it is organized logically according to emergent concepts and finally the themes that describe the data are determined (Yıldırım and Şimşek, 2006). It was used the concepts generally what were expressed from the participants when the data was codified. These codes were classified and then re-codified according to their relationships and partnerships. Thereby, the codes which were obtained on the first level were summarized by the thematic coding. It was tried to ensure the validity of the codes through the receiving opinions from the other a researcher related to obtained codes and themes, and was examined codes that how much represents the data. It was used the matrixes for the reader can see the relation in between codes through building visual form from obtained thematic codes.

3. Findings

The findings which were obtained from the analysis of the interview are presented in the matrix.

Table 1. The views about the importance of the visual elements' usage

Themes	Permanent Learning	Motivation	Pay Attention	Concretization
Designer A	1,2,3,4,5	6,12	7,8	N.I.
Designer B	9	N.I.	N.I.	10,11
Designer C	4,9	13	8	N.I.
Designer D	4,14	N.I.	8	N.I.

(1: Facilitation to learning, 2: Enhance to learn, 3: Improve to be permanent of learning, 4: Providing better comprehension, 5: Providing interaction, 6: spending time on the computer, 7: Effect to perception, 8: Pay attention, 9: Sightly, 10: Concretization, 11: Utilitization of simulations, 12: Motivate, 13: Providing concentration, 14: Being colorful, N.I: No information)

The designers; A, B, C and D indicated that the visual elements' usage on sites is important because of, they provided the address to visual sense, the interaction, the color, the permanent learning, the facilitation learning and the better understanding.

The designers; A and C indicated that the visual elements' usage on sites provides the motivation of the students.

The designers; A, C and D emphasized the importance on to attention of visual elements.

The designer B remarked the importance of the concretization by the visual elements' usage besides the other designers.

It was shown that the views of the web site designers what they consider the properties of visual elements in Table-2.

Table 2. The views about what they consider the properties of visual elements

Themes	Student's level	Simplicity	Interaction	Conformity	Design Instruments
Designer A	N.I.	N.I.	1, 2	3,4	5,6
Designer B	N.I.	N.I.	2,7,8	N.I.	N.I.
Designer C	9	10,11	N.I.	N.I.	N.I.
Designer D	9,12,13	N.I.	N.I.	N.I.	N.I.

(1: Motivation components, 2: Interaction, 3: Completeness, 4: Symmetrical elements, 5: Design models' usage, 6: Considering intended use of elements, 7: Feasibility of the activities by students, 8: Providing the sense of exploring, 9: Suitability of the student age, 10: Not to be complicate, 11: Using the hand drawings, 12: Suitable written language for the student grade, 13: Suitable font and font-size for the student grade, N.I.: No information)

The designers C and D emphasized that they, firstly, consider the grade of students for the design of educational oriented web sites. Thus, they indicated what they take care of the using suitable and understandable written language, font and font-size with respect to their evolution psychology.

The designers A and B indicated that they especially consider the interaction in the design of the visuals, and also they emphasized the necessity of using motivation components, feasibility of the activities by the students and providing the sense of exploring to the student.

The designer A indicated that he/she, firstly, take note of conformity and using some design instruments in the design of the visuals unlike the other designers.

It was shown that the views of the web site designers about deficiencies of the current educational web sites in terms of their visual elements in Table 3.

Table 3. The views about the deficiencies of the current educational web sites in terms of their visual elements

Themes	Interaction	Design principles	Pedagogy	Number and variety	Be subjective
Designer A	N.I.	6,4,5,1	9	N.I.	14,16
Designer B	1	N.I.	N.I.	N.I.	N.I.

Designer C	N.I.	6	9,10	N.I.	15
Designer D	1, 2	7,8	B.Y.	11,12,13	N.I.

(1: Lack of interaction, 2: Making passive the user, 3: Incompatibility between the visual elements, 4: Not taken into consideration of design principles, 5: Using too much color, 6: Non-conformity of the design, 7: Passivity, 8: Faults of the highlight, 9: Not taken into account of student level, 10: Deficiency of meeting the expectations of the student, 11: Lack of visual elements, 12: Lack of simulation, 13: Lack of real video, 14: Coming forward of the personal opinions, 15: Presenting the visuals with the fee, 16: Ignore to design of the web sites.)

The designers B and D expressed some deficiencies about visual elements' interaction property in the current educational web sites.

The designers A, C and D expressed some deficiencies in the current educational web sites about visual elements' design principles like conformity, size color, consistent, loading speed.

The designers A and C expressed some deficiencies about pedagogical sides.

The designer D expressed that the visual elements aren't enough as quantitative and not various.

The designers A and C expressed that the web site designers behave according to personal opinions and self interests.

It was summarized what the problems are to design of the visual elements in the current educational web sites by the Table 4.

Table 4. The views about what they meet the problems in the designing of the educational web sites

Themes	**Figure-Ground Segregation**	**Technical Problems**
Designer A	1,2	N.I.
Designer B	1,2,3	4,5,6,7
Designer C	N.I.	4,5,7,8
Designer D	N.I.	N.I.

(1: Fitting images to page structure, 2: Doing harmony between visuals and ground, 3: Transmission pictures to the page, 4: Adjustment size of the chart, 5: Setting the resolution, 6: Creating animations, 7: Creating picture-drawing, 8: Programming and coding problems)

The designers A and B indicated that they meet some problems about ensuring compatibility between visuals and ground in the design of visual elements.

The designers B and C indicated that they meet some technical problems like adjustment the size, setting the resolution, creating picture-animation and programming-coding.

It was shown that the suggestions of the web site designers about the design of the visual elements in Table 5.

Table 5. The suggestions of the web site designers about the designing visual elements.

Themes	**Team Work**	**Compare and Get opinion**	**Interaction**	**Level of the students**	**Design Principles**	**Boost usability and effectiveness**
Designer A	1	5,6	N.I.	9	10,11	N.I.
Designer B	N.I.	3,6	N.I.	9	12	16,17,22
Designer C	1,2	N.I.	7	9	12,13	18,19
Designer D	3,4	3	7,8	9	11,12,14	15,18,20,21

(1: Team work, 2: Working with good cartoonists, 3: Receiving opinions from professional designers and working with them, 4: Working with professional educators, 5: Testing to target audience and experts and taking feedback from them, 6: Comparison with the good web sites, 7: To be interactive, 8: Inclusion the educational games, 9: Considering the student's age and level of the information, 10: Using the design models, 11: Conforming to the design principles, 12: Having the information of designing tools, 13: Ensuring color harmony or using color harmony tools, 14: Pay attention to loading speed of the web site, 15: Take into account to assessment of the outcomes, 16: Creating scenarios and picture to screen, 17: Preparing according to outcomes, 18: Writing descriptive information related to visual elements, 19: To transmission an event with different visuals, 20: Preparing

the help menu, 21: Creating communication menu or forum, 22: Evaluation to the site with the specific evaluation criteria).

The designers A, C and D noted that the visual elements should be design with a team inside expert designers and educators.

The designers A, B and D noted that the visual elements should be tested by target audience and experts, and also they should be compared with good visual element examples.

The designer B emphasized unlike the others that the web sites' visual elements should be evaluated with specific evaluation criteria and in addition noted that it shouldn't digress from the outcomes.

4. Conclusion and Suggestions

Particularly focused on the needs of discovering the sense by providing interaction of visual elements. Nathan and Baron (1995), determined primary school students' preferences about software content, and they saw that students preferred very little text and demanding efforts exercise activities, thus they suggested the software must contain design properties what ensures students' attention, and they must maintain it.

As a result of the study, it was identified some deficiencies about design of visual elements on the current educational sites. Not taking into account the level of the students, visual elements are not interactive, the mismatch between visual elements, too many colors are used, the loading speed is not reasonable and not followed the design principles are stated. Dursun (2004), similarly educational web sites in terms of visual design reviews of his work, the site of the visual design (text-visual integration, color harmony, motion feature, visual layout, consistency, font and size, emphasis resolution) for the evaluation criteria in terms of have found to be insufficient.

More effective design of visual elements can be done to make, firstly, team work, to take good site designers' and experts' opinions, to be tested from the target audience has been suggested. Dursun (2004), in his work, the visual design of the criteria given more importance, the target audience's expectations are adequately analyzed, to benefit from the specialist (education specialist, graphic, web designer) have been noted. For made educational sites, a mechanism must be established to control sites according to the specific evaluation criteria.

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